

# Advanced Materials for Extreme Environments: Global Markets

<https://marketpublishers.com/r/ACA2370DB390EN.html>

Date: July 2020

Pages: 164

Price: US\$ 2,750.00 (Single User License)

ID: ACA2370DB390EN

## Abstracts

### REPORT SCOPE:

This report provides an updated review of advanced ceramic materials for extreme environments, including materials and production processes, and identifies current and emerging applications for these products.

BCC Research delineates the current status of the market for advanced ceramic materials for extreme environments, defines trends, and presents growth forecasts for the next five years. The market for advanced materials for extreme environments is analyzed based on the following segments: material group, composition, microstructure, configuration, application, and region. In addition, technological issues, including key events and the latest developments, are discussed.

More specifically, the market analysis conducted by BCC Research for this report is divided into five sections.

In the first section, an introduction to the topic and a historical review of the technologies of advanced materials for extreme environments are provided, including an outline of recent events. In this section, current and emerging applications for advanced ceramic materials for extreme environments are also identified and grouped in segments (aerospace and defense, energy, mechanical/chemical/ metallurgical, and others).

The second section provides a technological review of advanced ceramic materials for extreme environments. This section offers a detailed description of advanced materials for extreme environments, their properties, configurations, and typical fabrication methods. This section concludes with an analysis of the most important technological

developments since 2016, including examples of significant patents recently issued or applied for. The chapter ends with a highlight of the most active research organizations operating in this field and their activities.

The third section entails a global market analysis for advanced ceramic materials for extreme environments. Global revenues (sales data in millions of dollars) are presented for each segment (material group, composition, microstructure, configuration, application, and region), with actual data referring to the years 2018 and 2019, and estimates for 2020. Dollar figures refer to sales of these products at the manufacturing level.

The analysis of current revenues for advanced ceramic materials for extreme environments is followed by a detailed presentation of market growth trends, based on industry growth, technological trends, and regional trends. The third section concludes by providing projected revenues for advanced ceramic materials for extreme environments within each segment, together with forecast CAGRs for the period 2020 through 2025. Projected and forecast revenue values are in constant U.S. dollars, unadjusted for inflation.

In the fourth section of the study, which covers global industry structure, the report offers a list of the leading manufacturers of advanced ceramic materials for extreme environments, together with a description of their products. The analysis includes a description of the geographical distribution of these firms and an evaluation of other key industry players. Detailed company profiles of the top players are also provided.

The fifth and final section includes an analysis of recently issued U.S. patents, with a summary of patents related to advanced materials for extreme environments, fabrication methods, and applications. Patent analysis is performed by region, country, assignee, patent category, material type, material group, and application.

## **REPORT INCLUDES**

45 data tables and 24 additional tables

Comprehensive overview of the global markets for advanced materials for extreme environments (AMEEs)

Analyses of global market trends with data from 2018, 2019, estimates for 2020 and projections of compound annual growth rates (CAGRs) through 2025

Emphasis on the ceramic fabrication technology regarding AMEEs, major manufacturing issues, and reliance upon the use of state-of-the-art equipment and innovative processes

Coverage of the current status of these ceramic composite materials and identification of new materials under development for use in different applications, such as jet propulsion, energy conversion, hypersonic and space vehicles, and nuclear reactors

Detailed analysis of the current market trends, market size, market forecast, and discussion of technological, and regulatory elements that are affecting the future marketplace

A relevant patent analysis

Detailed profiles of the key industry players and their competitive landscape, including 3M, GE Aviation, Siemens, Sandvik, Morgan Advanced Materials and Shanghai Kessen Ceramics

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3M

ABLE TARGET

ARIANEGROUP

ATLANTIC EQUIPMENT ENGINEERS

COORSTEK

GE AVIATION

KENNAMETAL

MATECH

MATERION

MORGAN ADVANCED MATERIALS

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